Candidate surname | Other names

Centre Number | Learner Registration Number

Pearson BTEC Level 3 Nationals Extended Certificate, Foundation Diploma, Diploma, Extended Diploma

Time 2 hours

Paper reference **31760H**

Information Technology
UNIT 1: Information Technology Systems

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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Pearson

Answer ALL questions. Write your answers in the spaces provided.

1 Hazel is a freelance photographer.

She is home based and travels to photo shoots with clients.

(a) Hazel wants to buy a new laptop.

The table shows part of the specification of two laptops that Hazel is considering buying.

	Laptop A	**Laptop B**
Processor	Dual-core 2.4 GHz	Dual-core 2.2 GHz
RAM	8 GB	4 GB
Internal storage	1 TB HDD	256 GB SSD
Connectivity	Wi-Fi Ethernet Bluetooth 4.2 USB 3.1 x 2 USB 2.0 x 1	Wi-Fi Ethernet USB Type 3.1 x 3
Disc drive	No	DVD/CD
SD card slot	MicroSD	SD
Weight	2.04 kg	1.59 kg

(i) Hazel wants to share photographs with clients.

Laptop B has a DVD/CD drive. This would enable Hazel to store photographs on a DVD/CD.

Identify **two other** storage devices that Hazel could use with Laptop B.

(2)

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(ii) Explain **two** drawbacks of using DVDs to share photographs with clients.

(4)

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P 6 2 5 1 5 A 0 3 2 4

(b) Hazel has set up a wireless local area network (LAN) at home, which she shares with members of her family.

(i) Explain **two** benefits to Hazel and her family of using a LAN.

(4)

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(ii) Other members of the family sometimes use Hazel's laptop. Hazel must keep client data stored on her laptop secure.

Explain **two** methods Hazel could use to prevent family members accessing client data on her laptop.

(4)

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(c) Hazel will buy her new laptop from a reputable supplier who provides after sales IT support.

The IT support is provided using remote desktop technology.

Explain **two** reasons why Hazel may be reluctant to allow an IT support technician to access her laptop remotely.

(4)

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(d) Laptop A has a 1 TB HDD and Laptop B has a 256 GB SSD.

Discuss the characteristics of the **two** internal storage devices.

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(Total for Question 1 = 24 marks)

2 HJAC is an accountancy firm with a head office and several regional offices.

(a) Staff at the regional offices communicate with head office via video calls over the internet.

The quality of the video calls depends on the bandwidth and latency of the broadband connection.

(i) Describe the terms 'bandwidth' and 'latency'.

(4)

Bandwidth

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Latency

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(ii) Explain **two** factors that can affect bandwidth and latency.

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P 6 2 5 1 5 A 0 9 2 4

(iii) It is important to keep sensitive data secure during transmission between head office and regional offices.

HTTPS is one method of securing data during transmission.

Explain **two** ways HTTPS keeps data secure during transmission.

(4)

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(b) HJAC has a Code of Practice, outlining the moral and ethical responsibilities of staff in all areas of the business.

The Code of Practice includes guidance on the acceptable use of IT.

Discuss the guidance that should be given to staff on the acceptable use of IT.

(6)

(Total for Question 2 = 18 marks)

3 Flower Chain supplies plants to stores in the north of England.

Plants are transported to the stores in vans. The vans are temperature controlled. The temperature is monitored to provide ideal conditions for the plants.

- The temperature in the vans must be kept between 22°C and 28°C.
- If the temperature is below 22°C a heater is turned on.
- If the temperature is 28°C or above a fan is turned on.

(a) Draw a flow chart to show the process for maintaining the temperature in the van.

Use this space to draw your flow chart for Q3a.

(6)
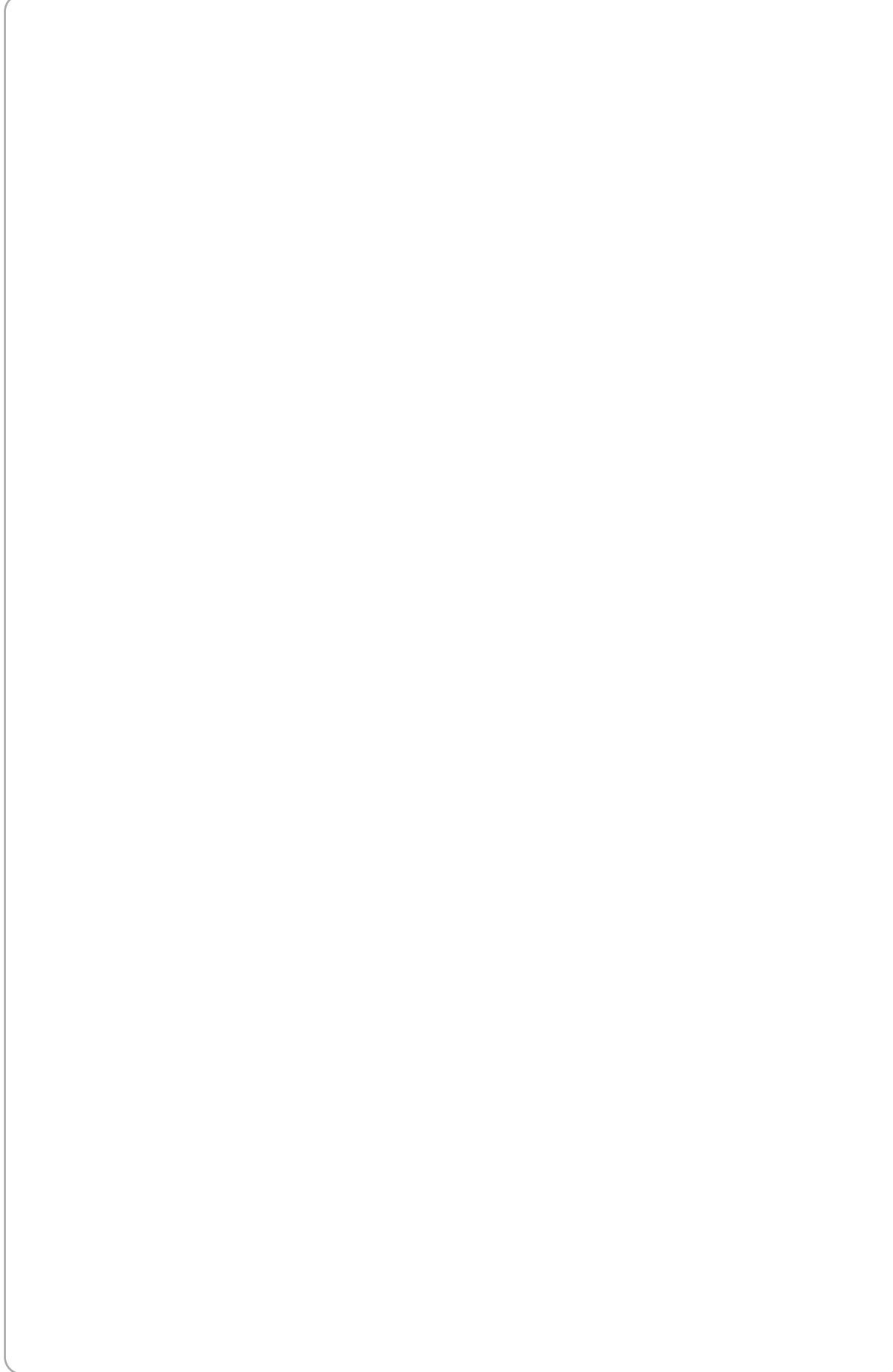
(b) Each van is equipped with a navigation system.

(i) Describe how a navigation system works out the location of a van.

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(ii) The navigation system gives the driver the location of each store, based on an address or postcode.

Describe **other** features of a navigation system that will help the driver make deliveries efficiently.

(4)

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P 6 2 5 1 5 A 0 1 5 2 4

(c) The navigation system has a graphical user interface (GUI).

Discuss the features of a GUI that make it the most appropriate type of interface for a navigation system.

(6)

(d) Flower Chain wants to sell plants directly to the public via its website.

In order to enhance customer satisfaction, the website should be available 24/7.

Discuss **other** factors that would enhance customer satisfaction when using the website.

(6)

(Total for Question 3 = 26 marks)

4 Individuals and organisations around the world make extensive use of information technology (IT) systems.

(a) There is a growing awareness of environmental issues relating to the use of IT.

Discuss how environmental concerns impact on the use of IT by individuals and organisations.

You should consider:
- hardware
- energy consumption
- recycling
- working practices.

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P 6 2 5 1 5 A 0 1 9 2 4

(b) Legislation relating to the use of IT systems impacts on individuals and organisations.

Assess the role of current legislation in protecting users and their data from attack and misuse.

You should consider:
- computer misuse
- copyright
- protection of data.

(12)

(Total for Question 4 = 22 marks)

TOTAL FOR PAPER = 90 MARKS

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